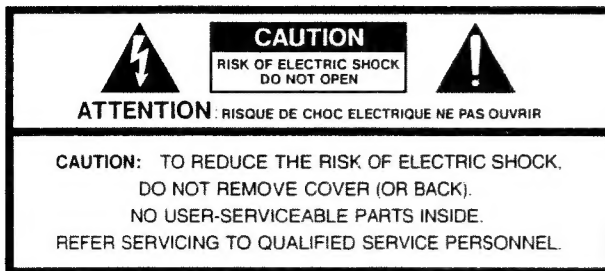


Owner's Manual

Roland Piano 2500s



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING — When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should avoid using in where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.


SAVE THESE INSTRUCTIONS

WARNING: THIS APPARATUS MUST BE EARTHED

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

The product which is equipped with a THREE WIRE GROUNDING TYPE AC PLUG must be grounded.

FEATURES

The Roland Piano utilizes SA/S technology to reproduce the timbres, dynamics, and characteristics of many of the world's most famous acoustic and electric keyboard instruments. These instrument voices include two acoustic grand pianos, electric grand piano, harpsichord, clavi, vibraphone and two electric pianos.

The Roland Piano includes built-in Chorus, Tremolo and Reverb effects.

Each of the keyboard timbres of the Roland Piano can be controlled via the keyboard of its own or through MIDI with full control over velocity (dynamics).

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■ HOW TO ASSEMBLE THE KS-2500 (Optional)

1

Attach side panels B to both ends of pedal unit A, with the holders on B facing inside, then tighten the screws (Fig.1). Be careful not to pinch or cut the connection cord.

2

Connect the connection cord as shown in Fig.2. Put C between the B panels and fix it with the screws.

3

Again being careful not to pinch or cut the connection cord, set the keyboard on the stand, sliding it toward you, and secure it with the supplied connecting pins, (Fig.1). (To tighten the connecting pins, use a large size screw-driver or a coin.)

4

Connect the stand's connector to the connector on the bottom of the keyboard, with both connectors facing to the same direction as shown in Fig.4.

5

Loosen the screw on cord clamp with the supplied screwdriver, pass the power cord through cord clamp, and retighten the screw (Fig.3).

6

After installing the assembled stand in place turn the adjusting bolt to assure firm contact with the floor. (Fig.5).

CAUTION:

Whenever it is necessary to move the Piano, make sure to remove the body from the stand by reversing the assembly procedure and move them separately.

Fig.1

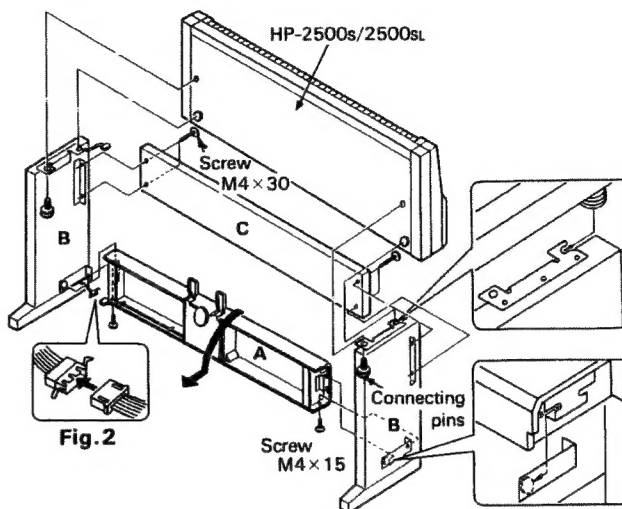


Fig.2

Fig.3

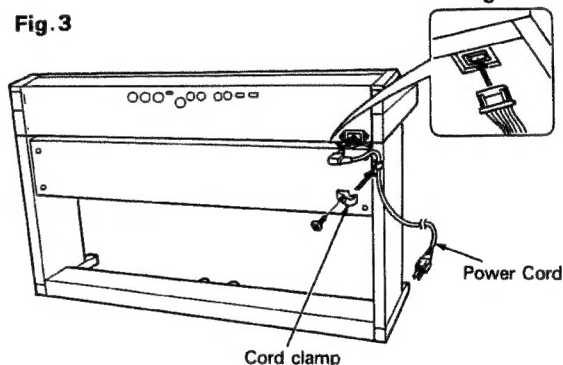
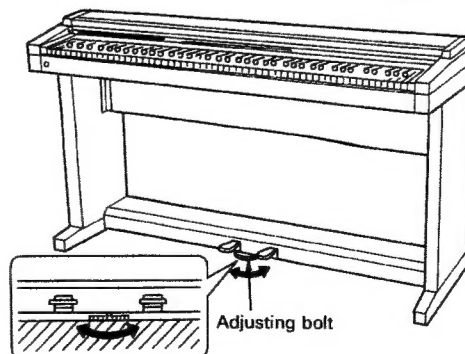


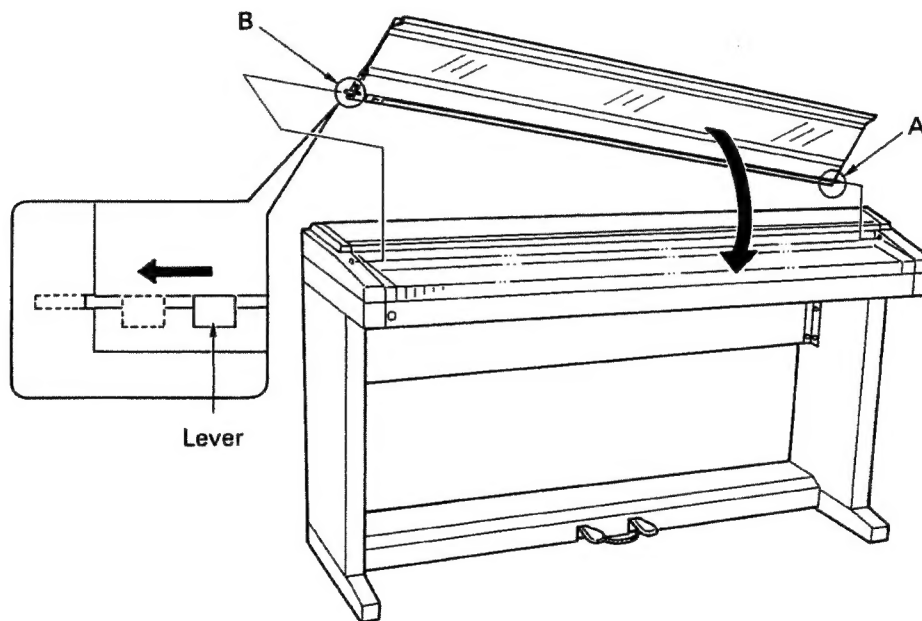
Fig.4

Fig.5

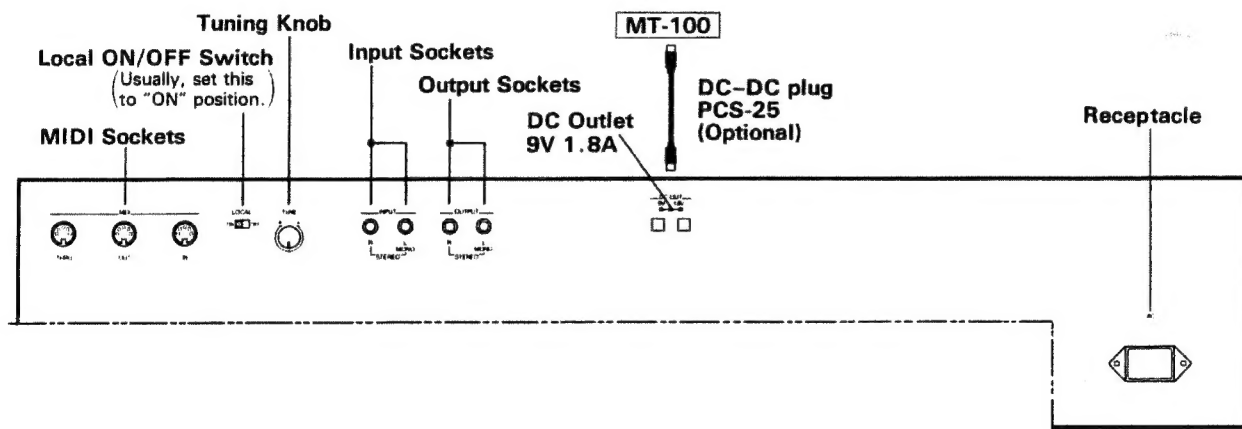
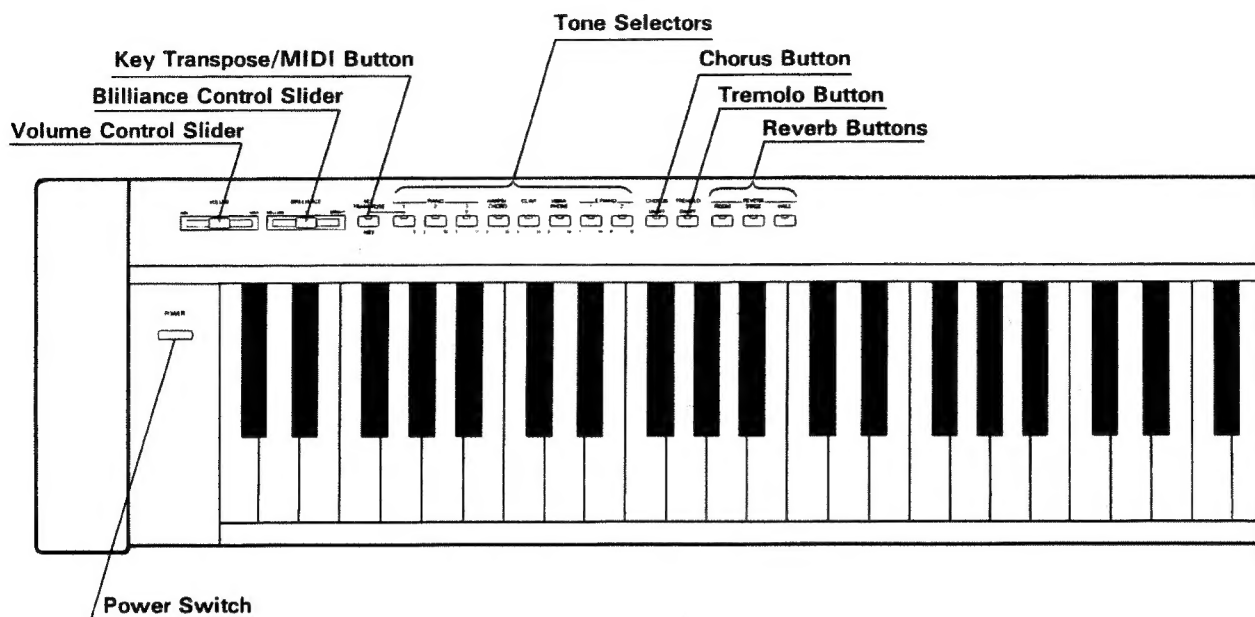


HOW TO ATTACH THE KEYBOARD COVER KL-2500

- ① Insert **A** into the hole on the side panel of the keyboard.
- ② Place **B** at the hole on the side panel of the keyboard, slide the lever, and insert the cover support hinge into the hole as shown in the picture.



■ PANEL DESCRIPTION



When using the "Roland Piano ism System"

Connect the supplied DC Outlet to the rear of the Piano, and power will be directly supplied to the MT-100.

* For connecting the DC Outlet, use the optional DC-DC plug PCS-25.

Notes on the DC Outlet

- Be sure to make connections with the piano switched off.
- Be sure that the polarity (+/-) of the DC Outlet is correct.
- Do not connect the DC Outlet to any device except 9V voltage.
- When using two DC Outlets, make sure that the total power consumption does not exceed 1.8A.

■ IMPORTANT NOTES

In addition to the items listed under Safety Precautions, on page 2, we request that you please read and adhere to the following.

Concerning the power supply

- Whenever you make any connections with other devices, always turn off the power to all equipment first. This will help in preventing malfunction, and damage to speakers.
- Do not force the unit to share the same power outlet as one used for distortion producing devices (such as motors, variable lighting devices). Be sure to use a separate power outlet.
- This unit might not work properly if the power cable is plugged in with the unit turned on. If this happens, simply turn the unit off, and turn it on again in a few seconds.
- Before using the unit in a foreign country, check first with your local Roland Service Station.

Maintenance

- For everyday cleaning, wipe the unit with a soft dry cloth, or one that is dampened slightly. To remove dirt that is more stubborn, wipe using a mild, neutral detergent. Afterwards, make sure to wipe thoroughly with a soft cloth.
- Never apply benzene, thinners, alcohol or any like agents, to avoid the risk of discoloration and deformation.

1 OPERATION

1. Basic Operation

① Connect the plug of the power cable to the wall socket.

② Turn the piano on.

* For about 2 seconds after turned on, the piano cannot be played because of the muting circuit.

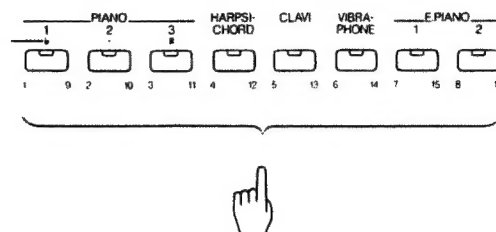
③ Adjust the volume with the Volume Control slider.



2. Tone Selection

The Roland Piano features 8 keyboard sounds; two acoustic grand pianos, electric grand piano, harpsichord, clavi, vibraphone and two electric pianos.

► To select a voice, press one of the Tone Selector buttons numbered 1 through 8. One keyboard sound can be selected at a time.



VOICE PRESERVE FUNCTION

The Roland Piano features the Voice Preserve Function, that is, while you are playing the keyboard using a certain voice, you can request the next voice to be used, without the voice actually changing until you release all the keys.

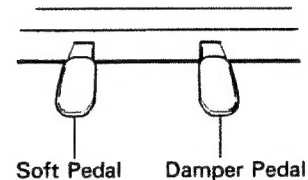
When the piano is being played with the Note or Damper/Sostenuto ON (See next page), the voice does not change (the indicator of the corresponding sound flashes.) To change the voices, lift all Notes and the Damper/Sostenuto OFF. (Now, the indicator of the new voice is constantly lit.)

3. Tuning

The Tune Knob is provided for controlling the overall tuning center of the Roland Piano. This is especially useful for tuning to other acoustic instruments, synthesizers, and synthesizer sound modules. Since the Roland Piano incorporate S/A Synthesis, the tuning of individual notes will never be necessary. At its center position, Middle A = 442Hz.

4. Damper/Soft/Sostenuto Pedal

The supplied stand (optional for the HP-3500s/4000sl) features two pedals:



- **Damper (Sustain) Pedal (right)**

The Damper Pedal makes the sound decay slowly.

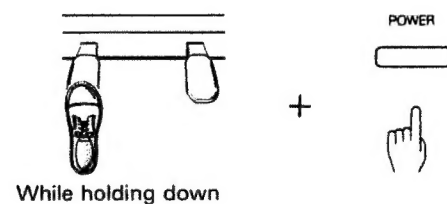
- **Soft Pedal (left)**

The Soft Pedal serves to make the performance softer.

- **Sostenuto Pedal**

How to turn the Soft Pedal to Sostenuto Pedal.

- ▶ **Switch the piano on while holding the pedal down.**



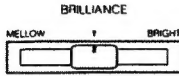
Pressing the Sostenuto Pedal will turn on the Damper of the note currently played, while the following notes will not take on any effect.

* When the pedal is turned to a Sostenuto function, the Soft function will temporarily cease.

To return the pedal to the Soft Pedal function, switch the piano off once, then after a few seconds, switch it on again.

5. Brilliance

As you slide the Brilliance Control to the right, the tone will become brighter, and mellow when moved to the left.

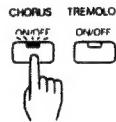


6. Chorus/Tremolo

The piano includes built-in Chorus and Tremolo effects.

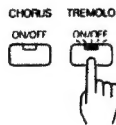
a. Chorus

- By pressing the Chorus button, a lush stereo chorus effect can be obtained through the instrument's internal speaker/amplifier or via the stereo outputs.



b. Tremolo

- The Tremolo button engages the tremolo effect. The Tremolo circuit is stereo and is especially useful when used with the electric piano and vibraphone sounds.

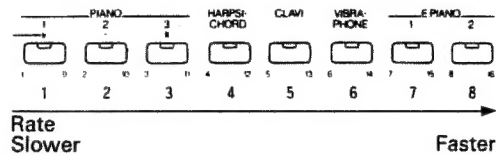


* On/Off of the Tremolo and/or the Chorus effect can be separately set in each voice and is retained until the piano is turned off.

When the piano is switched on, the effects of voices are set as follows:

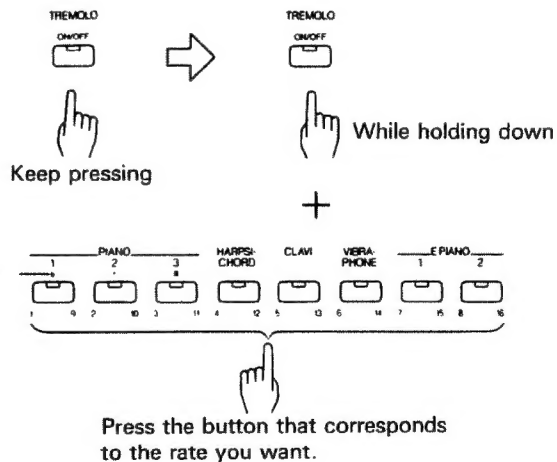
Piano 1/2/3	OFF
Harpsichord	OFF
Clavi	OFF
Vibraphone	ON (Tremolo)
E. Piano 1/2	ON (Chorus)

The rate of the Tremolo effect can be adjusted (8 levels).



- Hold the Tremolo button down, (the flashing indicator on the button becomes constantly lit, and meanwhile, the Tone Selector button which corresponds to the current rate flashes), then press the appropriate Tone Selector button to selecting the desired rate.

Start flashing



* The rate of Tremolo can be set separately for each voice and is retained until the piano is switched off.

7. Reverb

Reverberation, which is different from the direct sound that you hear from the sound source, reaches your ears after reflecting here and there. For example, when a musical instrument is played in a hall, even after the instrument stops giving sound, there is remaining sound in the hall for a while. This is the reverberation.

The Piano provides three different reverb effects, ROOM, STAGE and HALL.

• ROOM

This gives the reverberations of a live room.

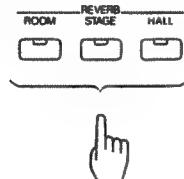
• STAGE

This gives the reverberations of a stage.

• HALL

This gives the reverberations of a concert hall.

Simply press a relevant Reverb button, ROOM, STAGE or HALL (the corresponding indicator lights up) to select a reverb.

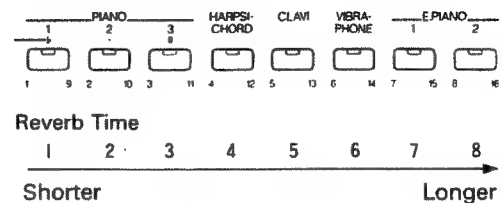


Pushing the same button again will turn off the reverb.

* STAGE is selected when the piano is switched on.

• Changing the reverberation time

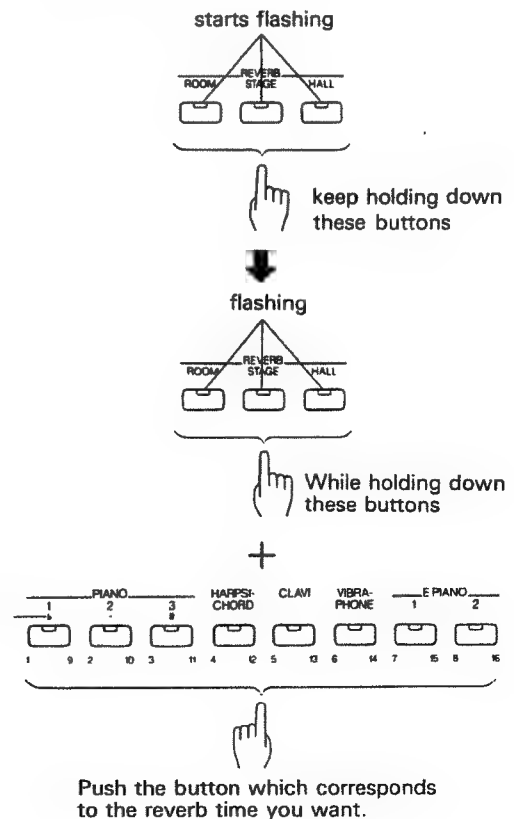
The Reverb time of each effect, Room, Stage or Hall, can be adjusted.



<Procedure>

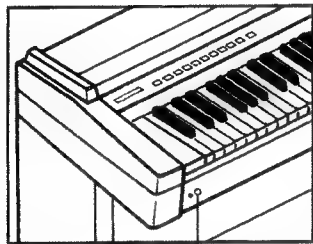
- ▶ While holding down either of the Reverb buttons (Room, Stage or Hall), press the Tone Selector button that corresponds to the reverb time you want.

Holding down the Reverb button will flash the Tone Selector button that corresponds to the reverb time previously selected. At this stage, you can select a new reverb time.



8. Headphones

Standard stereo headphones can be used with the Roland Piano for private listening and practice. Connecting the headphone plug to the headphone socket will disconnect the internal speakers. The Volume control on the front panel will adjust the headphone volume.

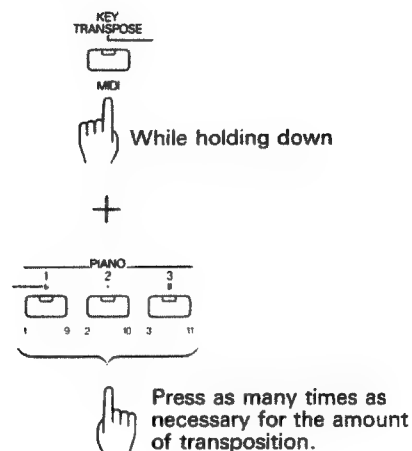


Headphone Socket

9. Key Transpose

The keyboard of your HP-2500s/2500sl can be transposed within a range of a perfect 4th up and a diminished 5th down.

► While holding the Transpose button down, press either of the following buttons as many times as necessary.



Button (= Piano 3 Button)

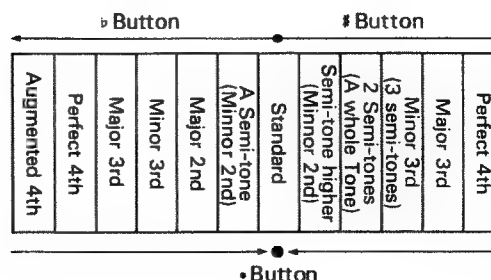
Pressing this button will increase the pitch in semi-tone steps. (This button can be used up to 5 times.)

b Button (= Piano 1 Button)

Pressing this button will decrease the pitch in semi-tone steps. (This button can be used up to 6 times.)

• Button (= Piano 2 Button)

This button returns the key to the normal condition.



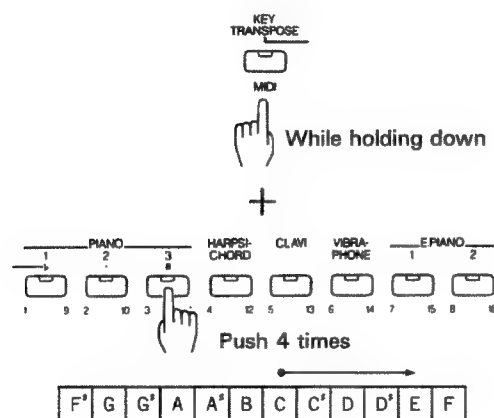
When the transposition is done, the Key Transpose button glows steadily.

Once the key is transposed, the Transpose On or Off can be selected by pressing the Key Transpose button.

* While you are taking the transposing procedure, the Piano cannot be played.

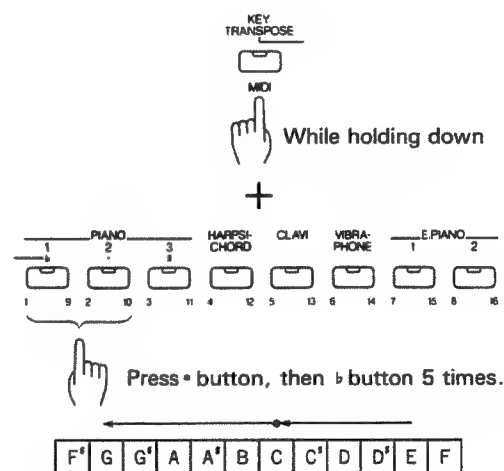
[e.g. 1] Transposing to E

While holding the Key Transpose button down, press the \sharp button four times.



[e.g. 2] Transposing E to G

While holding the Key Transpose button down, press the \square button once to return to the normal pitch, then press the \flat button five times (without releasing the Key Transpose button).



2 SETUP WITH AUXILIARY AUDIO EQUIPMENT

• Input Sockets

The external input sockets are provided for connecting the outputs of other electronic instruments (rhythm machines CR-1000, TR-626 or sound module MT-100, etc.) to the internal speakers and amplifier of the Roland Piano.

• Output Sockets

These Output Sockets are provided for connecting the Roland Piano to larger sound systems such as a home stereo system, multi-track recorders, mixers, and/or auxiliary instrument amplifiers.

<Setup>

- ① Turn down the volume of the external amplifier connected to the piano.
- ② Connect the Output Sockets of the piano to the Line In's (e.g. AUX) of the amplifier.
- ③ Adjust the volume of the amplifier.

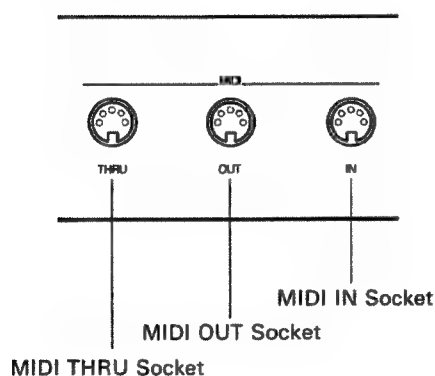
* Connecting the headphone plug to the headphone socket will disconnect the internal speakers.

3 MIDI

Part of the power of your Roland Piano is in the use of the MIDI (Musical Instrument Digital Interface). To learn more about MIDI and the various music systems that can be added to your HP-Piano, refer to the enclosed booklet "MIDI" and the MIDI implementation chart in the back of this owner's manual.

1. MIDI Sockets

The Roland Piano has MIDI IN, MIDI OUT and MIDI THRU Sockets on the rear panel.



• MIDI IN Socket

When using the piano as a MIDI sound module controlled by the external MIDI device, connect the MIDI IN socket to the MIDI OUT or MIDI THRU on the external device.

• MIDI OUT Socket

When using the piano as a keyboard controller that drives the external device, connect the MIDI OUT socket to the MIDI IN on the external device.

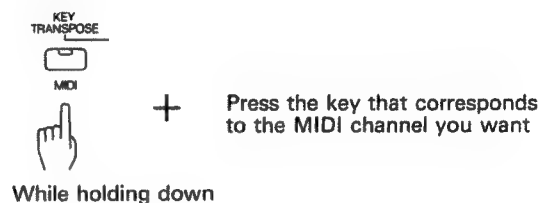
• MIDI THRU Socket

Through this, the exact copy of the signal fed into the MIDI IN is sent out.

2. Setting MIDI Channels

For MIDI setup, it is necessary to set the MIDI channel of a transmitter device to the same number as the receiver device.

► While holding the MIDI button down, push the key that corresponds to the MIDI Channel number you want. (See page 20.)

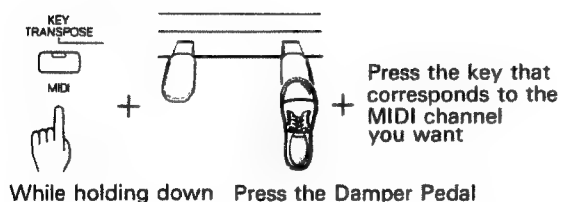


* While holding the MIDI button down, press the highest key to set the transmit channel to 1 and the receive channel to 1 (and OMNI ON). (Refer to the MIDI Implementation Chart in the back of this owner's manual.)

The receive and transmit MIDI channels can be set separately.

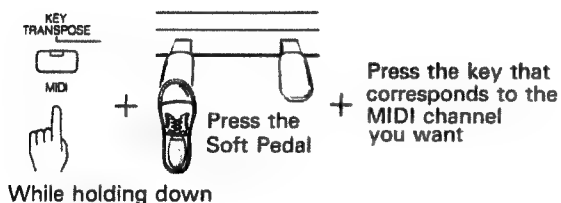
• Setting the Transmit MIDI Channel

- ① While holding the MIDI button down, press the Damper Pedal.
- ② While still holding both down, press the key that corresponds to the channel you wish. (See page 20.)



• Setting the Receive MIDI Channel

- ① While holding the MIDI button down, press the Soft Pedal.
- ② While still holding both down, press the key that corresponds to the channel you wish. (See page 20.)



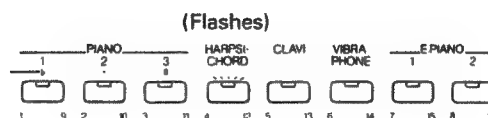
* To set the receive channel to 1 (and OMNI ON), press the the highest key while holding the MIDI button down.

* At power up. The transmit channel is set to 1 and the receive channel is set to 1 (and OMNI ON).

You can see the current MIDI channel with the indicator of the corresponding Tone Selector button.

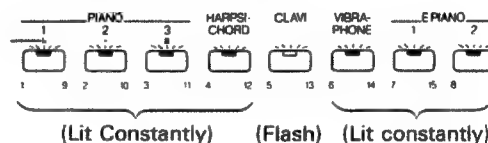
When the MIDI channel currently set is 1 to 8, the corresponding button flashes.

[e.g.] When MIDI channel 4 is currently set:



When the MIDI channel currently set is 9 to 16, the corresponding button flashes while all the other buttons are constantly lit.

[e.g.] When MIDI channel 13 is currently set:



* Pressing only the MIDI button will cause the Display to show the current MIDI channel.

3. Program Change

Program Change messages are MIDI messages for sound (e.g. Patch, Voice) selection. Program Change numbers are assigned to the sound (e.g. Patch, Voice) numbers on each instrument individually.

a. Transmitting Program Change

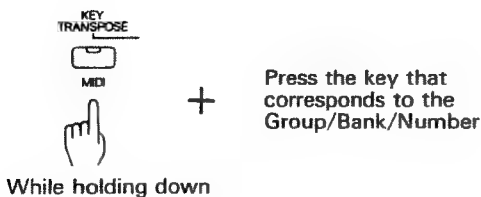
The Piano can transmit Program Change numbers (Group, Bank and Number) to an external MIDI device using the keys within the set range (see page 20 .)

The Group/Bank/Numbers on the correspond to the Program Change numbers as shown below.

Program Change Number Table

GROUP	BANK	NO							
		1	2	3	4	5	6	7	8
A	1	1	2	3	4	5	6	7	8
	2	9	10	11	12	13	14	15	16
	3	17	18	19	20	21	22	23	24
	4	25	26	27	28	29	30	31	32
	5	33	34	35	36	37	38	39	40
	6	41	42	43	44	45	46	47	48
	7	49	50	51	52	53	54	55	56
	8	57	58	59	60	61	62	63	64
B	1	65	66	67	68	69	70	71	72
	2	73	74	75	76	77	78	79	80
	3	81	82	83	84	85	86	87	88
	4	89	90	91	92	93	94	95	96
	5	97	98	99	100	101	102	103	104
	6	105	106	107	108	109	110	111	112
	7	113	114	115	116	117	118	119	120
	8	121	122	123	124	125	126	127	128

- While holding the MIDI button down, press the keys that correspond to the Group, Bank and Number (see page 21.)



b. Receive

When the piano receive Program Change messages 1 to 32, the corresponding voice is automatically selected.

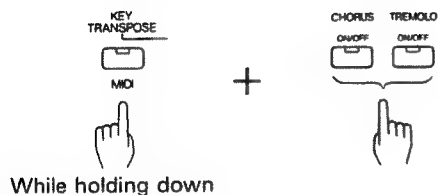
How the Program Change numbers correspond to the voices is shown in "MIDI Implementation" at the back of the manual.

* The Roland Piano receives 1 to 32 Program Change messages, but ignores 33 to 128.

4. Chorus/Tremolo

On/Off of the Chorus or Tremolo effect of an external device can be controlled:

- Push the Chorus or Tremolo button on the piano, while holding the MIDI button down.



5. MIDI Functions

The Roland Piano can select any of the following three modes that decide how the messages are received and transmitted.

- (I) Note On/Off, Pedal and Program Change and Chorus/Tremolo ON/OFF messages are transmitted and received.
- (II) Notes On/Off, Pedal and Program Change and Chorus/Tremolo ON/OFF messages are transmitted. Program Change messages are not received.
- (III) Note On/Off, Pedal and Program Change and Chorus/Tremolo ON/OFF messages are transmitted and received.
The moment a new voice is selected on the piano, the corresponding Program Change (1 to 8) is transmitted. On/Off of Chorus and/or Tremolo is also transmitted. Even without taking the Chorus/Tremolo procedure, Chorus and/or Tremolo On/Off messages are transmitted by turning on or off Chorus and/or Tremolo effect. This mode may be used when recording data into a MIDI sequencer.

<How to select one of the three modes>

- (I) Turning the piano on will automatically select this mode.
- (II) Turn the piano on while holding down the Tone Selector, Piano 1.
- (III) Turn the piano on while holding the Key Transpose button down.

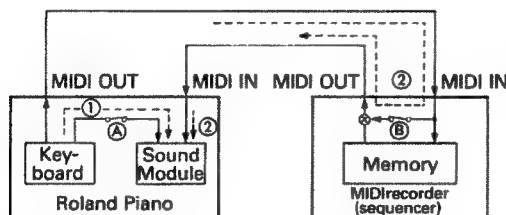
* MIDI Function modes II and III can be simultaneously selected.

6. Local ON/OFF

Usually, MIDI devices, including the Roland Piano, are not intended to transmit MIDI messages received at MIDI IN to MIDI OUT. However, MIDI sequencers are provided with the SOFT THRU function that enables to do that.

The Soft Thru function can be effective when using a MIDI Keyboard Controller and a separate MIDI sound module with a sequencer. That is, to record keyboard performance from a keyboard controller into a sequencer, and play it using the sound module, you connect the sound module to the MIDI THRU on the sequencer, play the keyboard controller, then disconnect it from the MIDI THRU, and connect it to the MIDI OUT of the sequencer to play it back. Such complication can be resolved by the Soft Thru function. Simply turn Soft Thru on, connect the sound module to the MIDI OUT on the sequencer, and you can record and playback without changing the setups.

The Soft Thru function, however, must not be on when using the sequencer with a Roland Piano type keyboard that contains both the keyboard and a sound module in it. If the Soft Thru on the sequencer is set to ON, the piano stutters, or the maximum voices are reduced. This is because the same performance information travels to the sound module section of the piano through the internal connection (①) and via sequencer (②).



① LOCAL SWITCH

② SOFT THRU SWITCH

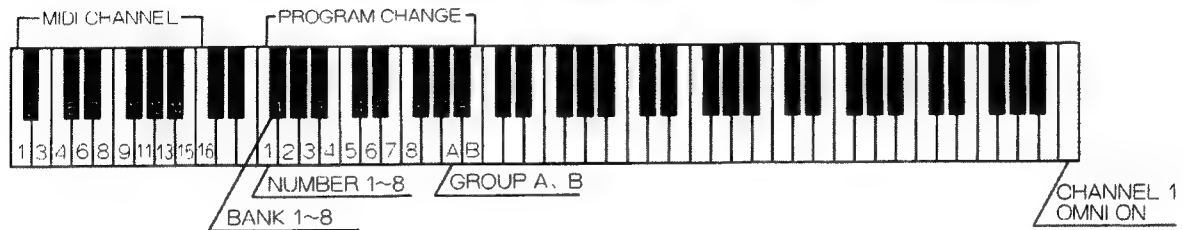
* These switches do not mechanically exist. These are the functions engaged in the software.

Most of the sequencers are default to SOFT THRU OFF, and therefore free from such a trouble. However, if the sequencer cannot be set to SOFT THRU OFF, you can set LOCAL OFF on the piano by setting the Local Switch on the piano to the "OFF" position. LOCAL ON may be called a normal condition (① route is connected).

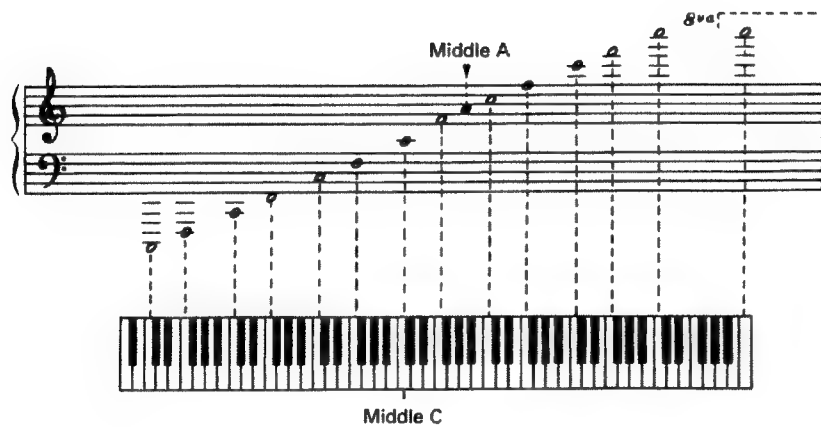
When the MIDI IN socket is not connected to a MIDI cable, this unit is always set to LOCAL ON no matter where the switch on the rear of the unit is set.

■ APPENDIX

MIDI Channel and Program Change correspond to the keyboard as shown below.



Sound Range Diagram



■ SPECIFICATIONS

	HP-2500s	HP-2500sl (A Keyboard Cover is Supplied.)
Keyboard	88 Keys, 16 Voice Polyphonic (10 Voice Polyphonic for Harpsichord, Clavi and Electric Piano 2)	
Preset Voices	Pianos 1,2,3, Harpsichord, Clavi, Vibraphone, Electric Pianos 1,2	
Effects	Chorus ON/OFF, Tremolo ON/OFF Reverb (Room, Stage, Hall) ON/OFF	
Connectors	Output Sockets (Mono, Stereo) Input Sockets (Mono, Stereo) MIDI IN Socket MIDI OUT Socket MIDI THRU Socket DC Outlet×2	
Switches	Power Switch Local ON/OFF Switch	
Speakers	16cm×2	
Output	20W×2	
Finish	Roland Original Oak	
Dimensions W×D×H	1417(W)×474.5(D)×153.8(H)mm 55 13/16"×18 11/16"×6 1/16"	
Weight	41kg/90lb 3oz	43kg/94lb 10oz
Consumption	117V : 80W 220/240V : 130W	
Accessories	Power Cord Music Rest	Power Cord Keyboard Cover (KL-2500)
Options	Stand (KS-2500) Keyboard Cover (KL-2500) DC—DC plug (PCS-25)	Stand (KS-2500) DC—DC plug (PCS-25)

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version 1.0).

Manufacturer-ID : 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer-ID.

Device-ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H - 0FH, a value smaller by one than that of a basic channel, but value 00H - 1FH may be used for a device with multiple basic channels.

Model-ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

0111
0211
0311
0011, 0111
0011, 0211
0011, 0011, 0111

Command-ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:

0111
0211
0311
0011, 0111
0011, 0211
0011, 0011, 0111

Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

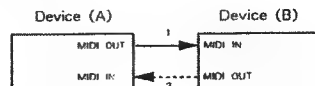
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records—waveform and tone data, switch status, and parameters, for example—to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

One-way transfer procedure (See Section 3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

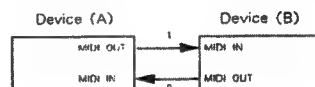


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

Handshake-transfer procedure (See Section 4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above two procedures

- * There are separate Command-IDs for different transfer procedures.
- * Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data all the way until it stops when the messages are so short that answerbacks need not be checked.

For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
⋮	⋮
⋮	LSB
ssH	Size MSB
⋮	⋮
⋮	⋮
⋮	LSB
sum	Check sum
F7H	End of exclusive

- *The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
- *Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- *The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
- *The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address - dependent order.

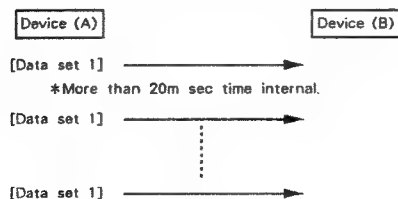
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
...	...
ddH	LSB
ddH	Data
...	...
sum	Check sum
F7H	End of exclusive

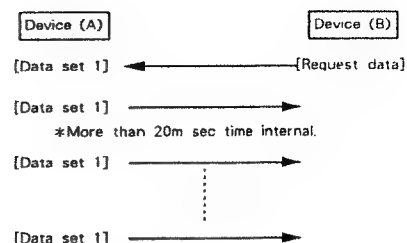
- *A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
- *Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- *The number of bytes comprising address data varies from one Model-ID to another.
- *The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

- Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



- Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4 Handshake- Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one-way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data - sampler waveforms and synthesizer tones over the entire range, for example - across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
...	...
ssH	LSB
ssH	Size MSB
...	...
sum	LSB
sum	Check sum
F7H	End of exclusive

- *The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
- *Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- *The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
- *The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH	Address MSB
...	...
...	LSB
ssH	Size MSB
...	...
...	LSB
sum	Check sum
F7H	End of exclusive

- *The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
- *Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- *The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
- *The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address dependent order.

Although the MIDI standards inhibit non-real time messages from interrupting an exclusive one, some devices support a "soft-through" mechanism for such interrupts. To maintain compatibility with such devices, Roland has limited the DAT to 256bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH	Address MSB
...	...
...	LSB
ddH	Data
...	...
...	...
sum	Check sum
F7H	End of exclusive

- *A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
- *Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- *The number of bytes comprising address data varies from one model ID to another.
- *The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

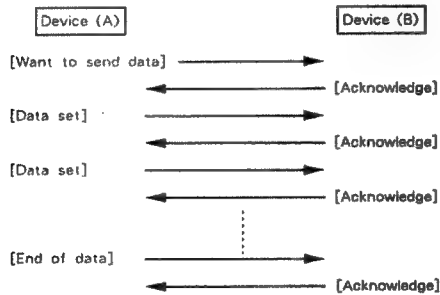
- a WSD or RQD message has specified an illegal data address or size,
- the device is not ready for communication,
- an illegal number of addresses or data has been detected,
- data transfer has been terminated by an operator,
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

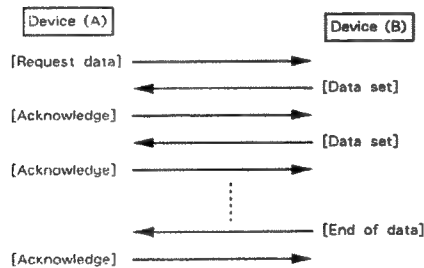
Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

- Data transfer from device (A) to device (B).

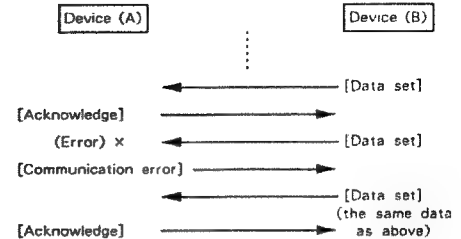


- Device (A) requests and receives data from device (B).

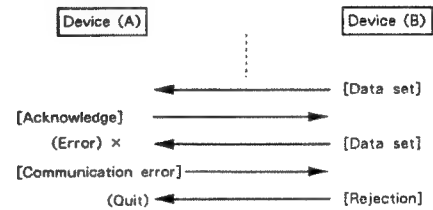


- Error occurs while device (A) is receiving data from device (B).

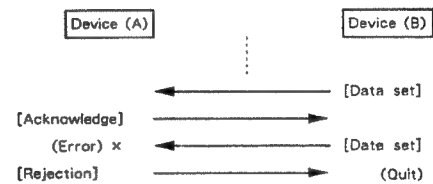
- 1) Data transfer from device (A) to device (B).



- 2) Device (B) rejects the data re-transmitted, and quits data transfer.



- 3) Device (A) immediately quits data transfer.



1. TRANSMITTED DATA**■ Channel Voice Message****● Note Off**

Status	Second	Third
9nH	kkH	00H
kk = note number 0FH - 71H (15 - 113)		
n = MIDI channel number - 1 0H - FH (0 - 15)		

● Note On

Status	Second	Third
9nH	kkH	vvH
vv = Velocity 01H - 7FH (1 - 127)		

The range of note numbers can be changed by transposition. The table below lists the degrees of the transposition. The default value is 0.

To transpose the keyboard, hold down the TRANSPOSE/MIDI switch then press the [b] switch to key down or [#] to key up, once for one semitone. Pressing the [b] switch more than 6 times ([#], 5 times) does not introduce further effect. To return the keyboard back to the original notes, press the [.].

Transposed Value (semitones)	Transmitted note range
-6	15 - 102
-5	16 - 103
-4	17 - 104
-3	18 - 105
-2	19 - 106
-1	20 - 107
0	21 - 108
+1	22 - 109
+2	23 - 110
+3	24 - 111
+4	25 - 112
+5	26 - 113

● Control Change**○ Hold - 1**

Status	Second	Third
BnH	40H	vvH
vv = 00H : OFF		
vv = 3FH : Half Damp		
vv = 7FH : ON		

○ Sostenuto

Status	Second	Third
BnH	42H	vvH
vv = 00H : OFF		
vv = 7FH : ON		

If the power has been applied with the Soft Pedal being held down, the Soft Pedal works as the Sostenuto Pedal.

○ Soft

Status	Second	Third
BnH	43H	vvH
vv = 00H : OFF		
vv = 7FH : ON		

○ Tremolo

Status	Second	Third
BnH	5CH	vvH
vv = 00H : OFF		
vv = 7FH : ON		

When the CHORUS switch is pressed while the TRANSPOSE - MIDI switch is being held down, the CHORUS ON or OFF message is sent.
If the power has been applied with the TRANSPOSE - MIDI switch being held down, pressing CHORUS switch sends CHORUS ON or OFF message.

○ Chorus

Status	Second	Third
BnH	5DH	vvH
vv = 00H : OFF		
vv = 7FH : ON		

When the TREMOLO switch is pressed while the TRANSPOSE - MIDI switch is being held down, the CHORUS ON or OFF message is sent.
If the power has been applied with the TRANSPOSE - MIDI switch being held down, pressing TREMOLO switch sends CHORUS ON or OFF message.

● Program Change

Status	Second
CnH	ppH
pp = program change (0 - 127)	

The following table shows the GROUP, BANK and NUMBER values related with key position which is set while the TRANSPOSE - MIDI switch being held down.

Key	GROUP, BANK, NUMBER
A 3	GROUP A
B 3	GROUP B
F # 2	BANK 1
G # 2	BANK 2
A # 2	BANK 3
C # 3	BANK 4
D # 3	BANK 5
F # 3	BANK 6
G # 3	BANK 7
A # 3	BANK 8
F 2	NUMBER 1
G 2	NUMBER 2
A 2	NUMBER 3
B 2	NUMBER 4
C 3	NUMBER 5
D 3	NUMBER 6
E 3	NUMBER 7
F 3	NUMBER 8

When one of the above - mentioned keys is pressed while the TRANSPOSE - MIDI switch being held down, a Program Change message will be transmitted.
The transmitted program change numbers are related with the GROUP, BANK and NUMBER values as follows.

GROUP A	NUMBER	1	2	3	4	5	6	7	8
BANK	I								
1	0	1	2	3	4	5	6	7	
2	8	9	10	11	12	13	14	15	
3	16	17	18	19	20	21	22	23	
4	24	25	26	27	28	29	30	31	
5	32	33	34	35	36	37	38	39	
6	40	41	42	43	44	45	46	47	
7	48	49	50	51	52	53	54	55	
8	56	57	58	59	60	61	62	63	

GROUP B	NUMBER	1	2	3	4	5	6	7	8
BANK	I								
1	64	65	66	67	68	69	70	71	
2	72	73	74	75	76	77	78	79	
3	80	81	82	83	84	85	86	87	
4	88	89	90	91	92	93	94	95	
5	96	97	98	99	100	101	102	103	
6	104	105	106	107	108	109	110	111	
7	112	113	114	115	116	117	118	119	
8	120	121	122	123	124	125	126	127	

If the power has been applied with the TRANSPOSE – MIDI switch being held down, the following Program Change message and CHORUS TREMOLO ON/OFF message which has been memorized for that tone will be sent when respective number is selected by panel operation.

<u>Switch</u>	<u>Program Chage Number</u>
PIANO 1	0
PIANO 2	1
PIANO 3	2
HARPSICHORD	3
CLAVI	4
VIBRAPHONE	5
E.PIANO 1	6
E.PIANO 2	7

■ Channel Mode Message

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	mmH	00H

mm = 7CH : OMNI OFF
mm = 7FH : POLY ON

When power is first applied or after Basic Channel is changed, OMNI OFF and POLY ON are sent in the current Basic Channel.

■ System Real – time Message

● Active Sensing

<u>Status</u>
FEH

This message is sent at less than 300ms intervals.

■ System Exclusive Message

<u>Status</u>
F0H : System Exclusive
F7H : EOX (End Of Exclusive)

These functions can be sent as Exclusive Message.

Reverb Mode Change (OFF, ROOM, STAGE, HALL)
Reverb Decay Time Change

If the power has been applied with the TRANSPOSE – MIDI switch being held down, Reverb Mode Change and Reverb Decay Time Change message will be sent when respective reverb is selected by panel operation.

(1) Reverb Mode Change (ROOM, STAGE, HALL, OFF)

The Exclusive Messages are as follows.

F0H	Status of System Exclusive
41H	Roland ID
00H	Device ID
1AH	Model ID
12H	Command ID (data set)
00H	Address (msb)
01H	Address (lsb) = Reverb select
vvH	Data vv = 00H – 7FH
ssH	Sum ss
F7H	End of Exclusive

vv = 00H : REVERB OFF
vv = 16H : ROOM – ON
vv = 40H : STAGE – ON
vv = 6AH : HALL – ON

(2) Reverb Decay Time Change

The Exclusive Messages are as follows.

F0H	Status of System Exclusive
41H	Roland ID
00H	Device ID
1AH	Model ID
12H	Command ID (data set)
00H	Address (msb)
02H	Address (lsb) = Decay time select
vvH	Data vv = 00H – 7FH
ssH	Sum ss
F7H	End of Exclusive

vv = 08H : Short
vv = 18H : |
vv = 28H : |
vv = 38H : |
vv = 48H : |
vv = 58H : |
vv = 68H : |
vv = 78H : Long

2. RECOGNIZED RECEIVE DATA

■ Channel Voice Message

● Note Off

<u>Status</u>	<u>Second</u>	<u>Third</u>
8nH	kkH	vvH
9nH	kkH	00H

kk = Note number 00H – 7FH (0 – 127)
vv = Velocity ignored
n = MIDI channel number – 1 0H – FH (0 – 15)

● Note On

<u>Status</u>	<u>Second</u>	<u>Third</u>
9nH	kddH	vvH

vv = Velocity 01H – 7FH (1 – 127)

Note numbers outside of the range 15 – 113 are transposed to the nearest octave inside this range.

The Key Transpose operation from the panel does not affect MIDI IN NOTE numbers.

● Control Change

○ Hold – 1

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	40H	vvH

vv = 00H : OFF
vv = 01H – 3FH : Half Damp
vv = 40H – 7FH : ON

○ Sostenuto

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	42H	vvH

vv = 00H – 3FH : OFF
vv = 40H – 7FH : ON

○ Soft

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	43H	vvH

vv = 00H – 3FH : OFF
vv = 40H – 7FH : ON

○ Tremolo (Can be ignored)

Status	Second	Third
BnH	5CH	vvH

vv = 00H - 3FH : OFF
vv = 40H - 7FH : ON

Tremolo ON, OFF by Control Change is not memorized (volatile) for each tone.
If the power has been applied with the PIANO 1 switch being held down, this message is ignored.

○ Chorus (Can be ignored)

Status	Second	Third
BnH	5DH	vvH

vv = 00H - 3FH : OFF
vv = 40H - 7FH : ON

Chorus ON, OFF by Control Change is not memorized (volatile) for each tone.
If the power has been applied with the PIANO 1 switch being held down, this message is ignored.

● Program Change (Can be ignored)

Status	Second
CnH	ppH

pp = Program change (0 - 7)

When Program Change is received, Tone is change as follows and CHORUS TREMOLO ON/OFF is set to the memorized status for that Tone.
If the power has been applied with the PIANO 1 switch being held down, this message is ignored.

Program Change Number	Tone
0	PIANO 1
1	PIANO 2
2	PIANO 3
3	HARPSICHORD
4	CLAVI
5	VIBRAPHONE
6	E.PIANO 1
7	E.PIANO 2

■ Channel Mode Message

● Local Control

Status	Second	Third
BnH	7AH	vvH

vv = 00H : OFF
vv = 7FH : ON

● ALL NOTES OFF

Status	Second	Third
BnH	7BH	00H

Recognized only when in OMNI OFF mode.

If the ALL NOTES OFF message is received before individual Note Off messages for all the On notes are received, (the notes that are Note Off state and sounding by damper or sostenuto are regarded as Note Off) all MIDI-on notes and MIDI-on damper, soft and sostenuto are turned off.

● OMNI OFF

Status	Second	Third
BnH	7CH	00H

● OMNI ON

Status	Second	Third
BnH	7DH	00H

● MONO ON

Status	Second	Third
BnH	7EH	mmH

mm = 00H - 10H

● POLY ON

Status	Second	Third
BnH	7FH	00H

When one of the above listed mode messages (Second = 124 - 127) are received, it is regarded as ALL NOTES OFF (whether it is in OMNI ON or OFF mode) and sets its mode as follows.

	POLY ON (127)	MONO ON (126)	MONO ON (126)
		mm = 1	mm > 1
OMNI OFF (124)	OMNI = OFF	OMNI = OFF	OMNI = ON
	POLY	POLY	POLY
OMNI ON (125)	OMNI = ON	OMNI = ON	OMNI = ON
	POLY	POLY	POLY

■ System Real-time Message

● Active Sensing

Status
FEH

Upon receiving this message, measuring the time at the end of every message is started. If no data is received within 300 ms, all the MIDI-on notes and MIDI-on Damper, Sostenuto and Soft, will be turned off.

■ System Exclusive Message

Status

F0H : System Exclusive
F7H : EOX (End Of Exclusive)

These functions are assigned for recognized Exclusive Message.

Reverb Mode Change (OFF, ROOM, STAGE, HALL)
Reverb Decay Time Change

(1) Reverb Mode Change (OFF, ROOM, STAGE, HALL)

When Reverb Mode Change is received, Reverb Mode is changed as follows, and Decay Time is set to the memorized value for that Reverb Mode.

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
01H Address (lsb) = Reverb select
vvH Data vv = 00H - 7FH
ssH Sum ss
F7H End of Exclusive

vv = 00H : Reverb OFF
vv = 01H - 2AH : ROOM - ON
vv = 2BH - 54H : STAGE - ON
vv = 55H - 7FH : HALL - ON

(2) Decay Time Change

Decay Time Change by Exclusive message is not memorized (volatile) for each Reverb Mode.

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
02H Address (lsb) = Decay time select
vvH Data vv = 00H - 7FH
ssH Sum ss
F7H End of Exclusive

vv = 00H - 0FH : Short
vv = 10H - 1FH : |
vv = 20H - 2FH : |
vv = 30H - 3FH : |
vv = 40H - 4FH : |
vv = 50H - 5FH : |
vv = 60H - 6FH : |
vv = 70H - 7FH : Long

3. BASIC CHANNEL SETTING

When the power is first applied, the Transmit and Receive Basic Channel is set to 1, MODE 3 (OMNI OFF, POLY ON).

When the following key on the keyboard is pressed while the TRANSPOSE - MIDI switch is held down, both Transmit and Receive Basic Channel will be Changed. In this state, if the highest key (C8) is pressed, Both Transmit and Receive Channel will be set to 1, MODE 1 (OMNI ON, POLY ON).

If the following key on the keyboard is pressed while the TRANSPOSE - MIDI switch is held down and damper pedal is pressed, only Transmit Basic Channel will be changed.

If the following key on the keyboard is pressed while the TRANSPOSE - MIDI switch is held down and soft pedal is pressed, only Receive Basic Channel will be changed. In this state, if the highest key (C8) is pressed, Only Receive Channel will be set to 1, MODE 1 (OMNI ON, POLY ON).

Key	Basic Channel	OMNI
Power - on	1	OFF
A 1	1	OFF
A # 1	2	OFF
B 1	3	OFF
C 1	4	OFF
C # 1	5	OFF
D 1	6	OFF
D # 1	7	OFF
E 2	8	OFF
F 2	9	OFF
F # 2	10	OFF
G 2	11	OFF
G # 2	12	OFF
A 2	13	OFF
A # 2	14	OFF
B 2	15	OFF
C 2	16	OFF
C 8	1	ON (receive only)

MIDI Implementation Chart

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1 - 16	1 1 - 16	
Mode	Default Messages Altered	Mode 3 POLY, OMNI OFF *****	Mode 3 POLY, OMNI ON/OFF MONO (M ≠ 1) → 1, (M = 1) → 3	
Note Number	True Voice	15 - 113 *****	0 - 127 15 - 113	
Velocity	Note ON Note OFF	○ × 9n, v = 0	○ ×	v = 1 - 127
After Touch	Key's Ch's	×	×	
Pitch Bender		×	×	
Control Change	64 66 67 92 93	○ ○ ○ * *	○ ○ ○ * *	Hold 1 Sostenuto Soft Tremolo Chorus
Prog Change	True #	○ (0 - 127) *****	* (0 - 7) 0 - 7	
System Exclusive		*	○	
System Common	Song Pos Song Sel Tune	×	×	
System Real Time	Clock Commands	×	×	
Aux Message	Local ON/OFF All Notes OFF Active Sense Reset	×	○ ○ (123 - 127) ○ ×	
Notes	* Can be set ○ or ×, when power is first applied. When power on, ch - 1 OMNI OFF and POLY are sent. When Basic channel is changed, Mode is set to 3.			

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

For West Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL PIANO HP-2500s/2500sL

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J. of Part 15. of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J. of Part 15. of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission: "How to Identify and Resolve Radio — TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.

For Canada

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B

AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

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